

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims to the application.

1. (canceled)

2. (Currently amended) A method of fabricating a thin-film compound solar cell having an n-type buffer layer formed therein for providing a heterojunction with a p-type semiconductor light absorbing layer formed on a back electrode, wherein a layer of In-Cu-Ga is formed by a sputtering mprocess and then heated in a selenium (Se) atmosphere to form a CIGS (Copper-Indium-Gallium-Selenium) light absorbing layer, wherein the buffer layer is formed on the light absorbing layer by chemical bath deposition (CBD) process using an aqueous solution for dipping therein a surface of the light absorbing layer, wherein the CBD process comprises forming a first step layer on the light absorbing layer in a solution being kept at a first specified temperature in the first step, depositing a second step layer on the first step layer in the solution by increasing temperature of the solution from the first specified temperature to a second specified temperature so as to deposit particles gradually being larger in grain size in the direction departing from the light absorbing layer surface, forming a third step layer being larger in grain size than the second step layer, the third step layer being formed by deposition on the second step layer in the solution being kept at the second specified temperature, wherein the first step and second step layers are formed on the light absorbing layer by deposition being rich in InS by regulating the pH value of the solution in a range of 1 to 3.5, and then the third step layer is formed on the layer formed by the first and second steps by deposition being rich in InOH-InO by regulating the pH value of the solution in a range of 3.5 to 12, wherein the formation of the buffer layer on the light absorbing layer is accomplished by stopping temperature control and pH regulation of the solution in a fourth step comprising performing the process of the first, second and third steps only once, providing a buffer layer that is formed by depositing particles gradually being larger in grain size in the direction departing from the light absorbing layer surface and wherein, after the formation of the buffer layer, a transparent electrode is formed by a sputtering process.

3. (Canceled)

4. (Withdrawn) A method of fabricating a thin-film compound solar cell having an n-type buffer layer formed therein for providing a heterojunction with a p-type semiconductor light absorbing layer formed on a back electrode, wherein the buffer layer is formed on the light absorbing layer by chemical bath deposition (CBD) process using an aqueous solution for dipping therein a surface of the light absorbing layer, wherein, in the CBD process of forming the buffer layer on the light absorbing layer whose surface is dipped in an aqueous solution for depositing particles thereon, pH of the solution is changed from a low level to a high level to cause the buffer layer to have different quality of deposit layers therein.

5-7. (canceled)

8. (Withdrawn) A thin-film compound solar cell having an n-type buffer layer formed for providing a heterojunction with a p-type semiconductor light absorbing layer formed on a back electrode, wherein the buffer layer is formed of layered deposits of particles of n-type semiconductor material and the layered deposits are different from each other by grain sizes gradually or stepwise increasing in the deposits in a direction outward from the light absorbing layer.

9. (canceled)

10. (Withdrawn) A thin-film compound solar cell having an n-type buffer layer formed therein for providing heterojunction with a p-type semiconductor light absorbing layer formed on a back electrode, wherein the buffer layer is formed of layered deposits of particles of n-type semiconductor material and the layered deposits are different from each other by pH-values being smaller in lower side deposit and larger in upper side deposit in a profile of the buffer layer.